

# Times Colonist (Victoria)

## Fish fight climate change, scientific team discovers; 'Gut rocks' reduce acid levels in oceans

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We're often told that there are plenty of fish in the sea, but just how much is plenty?

Two billion tonnes, according to a University of B.C. researcher.

Associate professor Villy Christensen from the UBC Fisheries Centre, along with a team of scientists from the U.S. and Britain, have published the first estimates of the total biomass of fish in the world in today's edition of the journal Science.

They also uncovered a previously unrecognized role of fish as a buffer against climate change. Because fish drink salt water, they ingest a lot of calcium that needs to be removed from their bodies or they get renal stones, Christensen said. Fish excrete the calcium as pellets of a chalk-like substance, calcium carbonate. These pellets are sometimes called "gut rocks." This process is separate from food digestion.

The carbon dioxide emissions linked to global warming also make the oceans more acidic. Oceans that are too acidic kill coral, dissolve animal shells and harm zooplankton, Christensen said.

The "gut rocks" raise the pH of the ocean, making it less acidic. "The oceans are a big buffer against climate change," Christensen said. "If we had only land, we would have been fried by now."

Having more fish in the ocean benefits everyone, Christensen explained. "[This is a] 'have your cake and eat it too' situation. If we have more fish in the system, it may buffer climate change, but it may also give us more food to eat."